REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-6 and 8-20 are now in the application. Claims 1, 4, 5, 6, 8, 10, 15, 17, 18, and 19 have been amended. Claim 7 has been canceled. Claim 20 has been added.

More specifically, the claims have been clarified with regard to the "core," its constitution and its placement in relation to the assembly. These changes will be addressed in detail in the following.

First, we address the rejections under 35 U.S.C. § 112, first and second paragraphs, in paragraphs 11 and 13 of the Office action. The rejections deal with the placement of the core 1. The Examiner stated that the limitation "substantially symmetrically" was neither definite nor was it expressly disclosed in the original disclosure. Instead of the term "symmetric," applicant has chosen "central." The latter term defines the invention properly. The core 1 is centered in each of the exemplary assemblies. For instance, the three "elliptical" embodiments (Figs. 1 to 3) have the core substantially centered with reference to any cutting axis. The term "centrally" is thus clearly in order for these embodiments. The term is even more clearly applicable to the

embodiment of Fig. 4B and Fig. 4D. There, the assembly is even illustrated as being derived from "folding" along a line of symmetry (Figs. 4A, 4C) and the resulting assembly necessarily would have the core centered in the assembly.

Next, we address the change from "solid core" to "hollow core" as well as the introduction of "flexurally rigid hollow section" in claim 20. The latter expression is supported in the specification, on page 8, lines 5-6.

The expression "solid core material" is a translation of the term "festes Kernmaterial" as it appears in the German priority applications and in the international application upon which the instant application is based. While the term "solid" was a proper translation, the German original "fest" has a slightly broader meaning, as it includes meanings such as "rigid," "fixed," "firm," "static," "hard," "resistant," and the like. While the English word "solid" may also be ascribed these meanings - at least its use conjures up these connotations - it is most often used to signify its common meaning of having no cavity formed therein.

In the instant case, however, applicant used the term with the broader meaning and also detailed the broader definition within the specification. We rely on a body of patent law that

allows and supports applicant to be his own lexicographer. See, e.g., Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295 (Fed. Cir., Sept. 14, 2004); and W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540; 220 USPQ 303 (Fed. Cir. 1983, 1984).

Throughout the specification, the term "solid core material" was used to refer to either the "truly solid" core as it is illustrated, by way of example, in Figs. 1 and 2, or to the core with the cavity or cavities as it is illustrated in Figs. 3, 4B, and 4D. In the brief description of Fig. 3, for example, the core is detailed as "a solid shaped body with a cavity." Spec., page 5, line 15. In the detailed description, the "solid core material 1 is formed by a flexurally rigid hollow section 6." Spec., page 6, lines 5-6. Furthermore, in the original claim 7, the "solid core material is formed of a hollow section." Spec., page 10, line 10. Similar examples abound throughout the specification.

In light of the foregoing, the Examiner is requested to enter the amendment and to reconsider the rejection of claims 15-19 under 35 U.S.C. § 112, first and second paragraphs.

Next we address the repeated rejections under 35 U.S.C. § 112, first and second paragraph, appearing in items 2 and 3 of the

Office action. The rejections are based on the Examiner contention that the original specification does not provide an enabling disclosure for the claimed "activatable material" and does not clearly teach to one of ordinary skill in the art what is meant by "activatable foamable material."

We respectfully disagree. Since our previous responses in this regard have been unsuccessful, we have consulted a leading expert in the field of structural design and structural automotive technology. The enclosed declaration under 37 CFR § 1.132 by Professor Dr. Erich Schürmann of the University of Applied Sciences, Soest, Germany, supports applicant's position and clarifies that the choice of a specific "activatable material" for a given application is a result-driven selection that is clearly within the purview of one of ordinary skill in the pertinent art. A plethora of heat-activatable, foamable materials are available to the person of skill in the art and the specific selection of such a material from the palette of available materials does not call for any undue experimentation.

In fact, it would appear to be clear that the specific selection would have to be based on only a few simple parameters. By way of example, the volume (or cross-sectional area) of the space to be filled by foaming would guide the

selection of the "expansion" parameter of the foamable material. If the coating is applied to fill the cavity between the core 1 and the outer plate 4 half-way, then the foamable material must have an expansion value upon activation of at least 100%, and preferably more to lead to a tight fit and to allow for lateral flow escape. Another parameter to be considered is the activation temperature and time. According to the claimed invention, the activation of the foamable material is effected together with the step of drying the corrosion protection agent. The activation temperature, therefore, would also be an easily selected parameter. Finally, the rigidity of the end product, i.e., the foamed material in the cavity between the core 1 and the outer plate 4, is also a result parameter that drives the selection of the activatable material.

As corroborated by Professor Schürmann in the enclosed declaration, the selection of proper such materials is an exercise for the engineer and falls squarely within the purview of a person of ordinary skill in the pertinent art.

We would also like to direct the Examiner's attention to the primary reference Thum. There, the shell 1 is formed of foamable material. Thum states:

> Various materials may be used for the shell. A suitable starting material is a mixture of capsules containing different components of a polyurethane material which, when mixed, will foam and harden upon application of heat. The capsule walls consist of a material which will melt or deform upon heating. Expandable wall material is also suitable.

Thum, col. 2, lines 38-44.

The exemplary materials mentioned in the declaration by Prof. Schürmann appear in U.S. Patent No. 6,482,486 B1.

In view of the foregoing, the claims and the specification meet the requirements of 35 U.S.C. § 112, first and second paragraphs.

We now turn to the art rejections. In which claims 1-14 have been rejected as being obvious over Thum (US 5,194,199) in view of Soderberg (US 5,160,465), and claims 15-18 have been rejected as being obvious over the same combination and further in view of Russell (WO 93/05103) under 35 U.S.C. § 103.

To begin with, it is appreciatively noted that claim 19 has not been rejected on art. In light of the clarification of claim 19 and the "correction" of the expression "substantially symmetrically," claim 19 is now in condition for allowance. Claim 20, which depends from claim 19, should be allowed as well.

The instantly claimed invention pertains to structural parts (e.g., reinforced beams for car bodies) and to the production of such structural parts. Two divergent objects must be kept in mind: On the one hand, the product must be rigid and have good shock-absorbing and force-absorbing properties. On the other hand, it must be lightweight.

These are the reasons why Thum, for example, places a "reinforcing core of lightweight material" inside the beam cavity. The core 2 is a solid without cavities. Due to the fact that the core is formed of a lightweight material, it is limited in its reinforcing properties. If Thum were to place a more rigid and stiffer core inside the cavity, it would lose its lightweight characteristic, and the resulting product would not be suitable for use in a vehicle body. Thum, furthermore, considers only solid cores without cavities and, indeed, his very invention and description is based on the solid core concept.

Thum's prior art placed solid cores (e.g., foam material, fiber mats impregnated with Duroplast) into the shaped steel beam and subsequently welded the beam shut. Col. 1, lines 35-61. This, however, subjected the light-weight core material to "danger of damage . . . resulting from the heat applied during

welding." Col. 1, lines 32-33. The solution provided by Thum was to leave gaps between the core 2 and the metal shell 1 which, during welding, would act as "heat-insulating spaces." The hollow member could "be produced in as complicated a form as required . . . [and with] a positive stressed connection between the core and the hollow member." Col. 3, lines 31-33. Thum found a solution that protected his solid light-weight core during welding and provided a completely filled space inside the hollow member. It is clear that Thum never considered changing the core or the core material.

We judge the claimed invention against this background. The two requirements for the hollow section (i.e., light-weight, yet rigid) are balanced differently. Instead of providing an otherwise "weak" lightweight core, applicants provide a hollow core. Such a core may be formed of a strong material, yet it need not weigh much because it is hollow. A variety of suitable materials are disclosed, including foamed or unfoamed metals, reinforced synthetic materials, and acoustic foam.

Looking now to Soderberg, we find that the secondary reference does not teach anything that would prompt a modification to Thum's teaching concerning the solid core without a cavity. In fact, Soderberg's entire insert 8 is formed of heat-activated foamable material which, upon activation, will expand and

"occupy the whole of the cross-sectional area." Col. 5, lines 13-14. The core of Soderberg is a leightweight structure that "forms a sound and moisture insulating plug of closed-cell foam." Col. 6, lines 14-15.

The combined teachings of Thum and Soderberg do not suggest either the method or the product defined in applicant's claims.

Referring now specifically to the claimed method, it is respectfully submitted that Thum and Soderberg cannot be combined to show the claimed invention. Their respective teachings are contrary to one another in a primarily important aspect of the invention. Claim 1 of the instant application, for instance, recites that the corrosion protection agent is dried and the foaming of the activatable material is initiated in the same processing step.

In contrast, Thum teaches to utilize the heat of the anti-corrosion immersion bath for the foaming. It is indeed important to Thum that the foaming is effected together with the anti-corrosion coating so that "a load-transmitting connection between the core of light-weight material and the hollow beam is produced without additional production steps." Col. 2, lines 6-9. Further, Thum teaches that, since the

immersion coating step is required in any event, "the foaming of the shell material thus requires no additional step or further application of energy." Col. 2, lines 34-38. Thum, therefore, counsels against the separation of these two steps for reasons of the efficiency of the process and for reduced energy usage.

Soderberg, of course, is very specific in regards to teaching just the opposite. There, the part is first assembled, the vehicle is subjected to anti-corrosion treatment, and the anti-corrosion agent is subsequently dried and the insert is expanded.

When two references teach such opposite processing sequences, it is incumbent upon the Examiner to clearly show why a person of skill in the art would have modified the teaching of the primary reference to proceed as taught by the secondary reference. This is even more important where the primary reference explicitly counsels against the modification. In the instant case it is respectfully submitted that the modification proffered by the Examiner can only be arrived at with hindsight. "It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps . . . . The

references **themselves** must provide some teaching whereby the applicant's combination would have been obvious." In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991) (emphasis added). Here, the Examiner has not pointed to any such suggestion in the prior art.

We do not disagree with the Examiner's statement in paragraph 5 on page 4 of the Office action that the question is what a given combination of disclosures taken as a whole would suggest to the person of ordinary skill in the art. Here, we have a situation in which each of the two references expressly counsels against the Examiner's proffered modification and the Examiner has not shown any express or implicit suggestion to combine the references so as to arrive at the claimed invention. The Examiner has not presented a prima facie case of obviousness.

In view of the foregoing, reconsideration and allowance of claims 1-19 are solicited.

Petition for extension is herewith made. The extension fee for response within a period of two months pursuant to Section 1.136(a) in the amount of $215.00.00 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

For Applicant

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